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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|------------------------------|------------------|
| 10/736,831 | 12/17/2003 | Takeshi Kajiyama | 246703US2S | 4834 |
| 22850 | 7590 | 01/23/2006 | | |
| OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314 | | | EXAMINER BOOTH, RICHARD A | |
| | | | ART UNIT 2812 | PAPER NUMBER |

DATE MAILED: 01/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

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|------------------------------|------------------|-------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 10/736,831 | KAJIYAMA, TAKESHI | |
| | Examiner | Art Unit | |
| | Richard A. Booth | 2812 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 November 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) 7-13 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 and 14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>1203</u> | 6) <input type="checkbox"/> Other: _____ |

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-3 and 14 are rejected under 35 U.S.C. 102(a or e) as being anticipated by Asao et al., U.S. Patent 6,590,244.

Asao et al. shows the invention as claimed including a magnetic memory device comprising: a memory cell which includes a first wiring line 19a composed of a first wiring layer, a second wiring line 26 composed of a second wiring layer and provided above or below the first wiring line so as to cross the first wiring line, and a magnetoresistive effect element device (41,42,43) provided in a position where the first wiring line and the second wiring line cross each other; and a peripheral circuit which includes a third wiring line 19b provided around the memory cell and composed of the first wiring layer, a fourth wiring line 20b provided above or below the third wiring line and composed of the second wiring layer, and at least one magnetic layer forming the magnetoresistive effect element device 30 and provided between the third wiring line

and the fourth wiring line and connected to only one of the third wiring line and fourth wiring line (see fig. 1 and col. 6-line 6 to col. 6-line 53).

Regarding claim 2, note that the at least one magnetic layer (41,43) corresponds to the third and fourth wiring lines.

With respect to claim 3, note that the magnetoresistive effect element device has a three-layered structure including two magnetic layers (41,43) and a nonmagnetic layer (42) provided between the two magnetic layers.

Concerning claim 14, the magnetic layer is composed of a magnetic layer used to form the magnetoresistive effect element device in the memory cell.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 4-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Asao et al., U.S. Patent 6,590,244 in view of Pan et al., U.S. Patent 6,548,849.

Asao et al. is applied as above but does not expressly disclose wherein the first and second wiring lines have a yoke structure, or wherein at least one of the first to fourth wiring lines has a yoke structure.

Pan et al. discloses forming wiring lines in a MRAM structure with a yoke structure (see abstract). In view of this disclosure, it would have been obvious to one of

ordinary skill in the art at the time the invention was made to have the first and second wiring lines of a yoke structure because this allows for a lower programming current.

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Asao et al., U.S. Patent 6,590,244 in view of Scheuerlein et al., IEEE International Solid State Circuits Conference.

Asao et al. is applied as above but does not expressly disclose a switching element device electrically connected to the magnetoresistive effect element device.

Scheuerlein et al. discloses a switching element device electrically connected to the magnetoresistive effect element device (see page 128). In view of this disclosure, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device of Asao et al. so as to incorporate the switching element device of Scheuerlein et al. because such a device produces an excellent bandwidth to sense power ratio.

Response to Arguments

Applicant's arguments filed 11/8/05 have been fully considered but they are not persuasive. Applicant argues that the claimed magnetic layer is not shown in the Asao et al. reference. However, the examiner respectfully disagrees because, for example, the magnetic layer 41 is connected only to the third wiring line 19b and the magnetic layer 43 is connected only to the fourth wiring line 20b.

Conclusion


THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Richard A. Booth whose telephone number is (571) 272-1668. The examiner can normally be reached on Monday-Thursday from 7:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Lebentritt can be reached on (571) 272-1873. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Richard A. Booth
Primary Examiner
Art Unit 2812

January 11, 2006